

INTERNATIONAL  
SPACE  
STATION **2024**  
CALENDAR

# A message from the Program Manager for the International Space Station



Greetings from Houston, Texas!\*

A quarter of a century ago, two independent modules named Zarya and Unity were brought together in orbit to usher in the era of the International Space Station. From this singular outpost on the edge of space, to the highly capable microgravity laboratory that the International Space Station is today\*\* — it's an exciting *new era*, as all international partners have committed to extending their time aboard this amazing platform. This extension of time aboard the space station allows us all to reap the benefits of more than two decades of experiments and technology demonstrations, and to continue materializing even greater discovery.

Something I always emphasize is the “*international*” in “International Space Station.” One of the many strengths of our program is our international partnerships. With them, we are reaching countries throughout the world. To date, we have conducted experiments aboard

the orbiting laboratory from 116 countries through this incredible partnership, which stems from the common goal of advancing science and exploration for the betterment of humanity.

The station's continued success and advancements as a world-class science platform is a testament to the creativity, commitment, and excellence of the people who make up the space station partnership.

We look forward not only to what's to come in 2024, but through the decade. This includes more research, new hardware, the arrival of state-of-the-art vehicles from our commercial partner space fleet, the continuation of private astronaut missions that are supporting low Earth orbit commercialization efforts, and technology demonstrations that support the agency's plans to return humans to deep space.

There's a lot happening on the International Space Station, and the best way to keep up to date is through our daily blog on [NASA.gov/station](https://www.nasa.gov/station), and by following our social media accounts listed on the back of this calendar.

I wish you a prosperous 2024, and thank you for following along the continuing journey of the International Space Station.

Best wishes,

**JOEL R. MONTALBANO**

International Space Station Program Manager

\* Pictured above is International Space Station Program Manager Joel Montalbano with longhorn cattle at NASA's Johnson Space Center in Houston, Texas. The Longhorn Project, a 501(c)(3) nonprofit organization located at Johnson, is a unique, hands-on educational program, which blends Texas' ranching legacy with innovative science and engineering instruction and NASA's bold human space exploration programs. For over a quarter-century, the Longhorn Project has been home to educational field trips, bringing thousands of students to Johnson Space Center to enjoy longhorns and spacecraft while studying genetics, animal husbandry, agronomy, and sustainability, as well as learning about NASA's past and future missions.

\*\* Head to page six to see just how much the station has grown since Zarya and Unity.



**Dana Weigel**

*International Space Station Deputy Program Manager*

Dana Weigel serves as the International Space Station deputy program manager. Weigel shares responsibility with the International Space Station Program Manager for the day-to-day management, development, integration, and operation of the International Space Station. Weigel works across International Space Station organizations, NASA centers, other government agencies, and international partners to ensure one functional integrated system.



**Dina Contella**

*International Space Station Program Operations Integration Manager*

Dina Contella serves as the International Space Station Program operations integration manager. In this role, she is responsible for the overall management and integration of International Space Station Program operational elements, with the primary focus on supporting the performance of real-time and near real-time missions. As chair of the IMMT, Contella is responsible for all aspects of the execution of on-orbit program activities for the integrated space station.



**Melissa Gard**

*International Space Station Program Chief of Staff*

Melissa (Missy) Gard serves as the International Space Station program chief of staff. In this role, Gard supports senior program management by optimizing their schedules and working with the program management team to prioritize actions and issues requiring approval. She is responsible for handling the day-to-day administrative functions of the office and manages the program's contracting officer representatives. Additionally, she is the cooperative agreement technical officer for the International Space Station National Laboratory.



**Robyn Gatens**

*International Space Station Director, NASA Headquarters*

Robyn Gatens serves as the International Space Station director for the Space Operations Mission Directorate at NASA Headquarters. In this role, Gatens leads strategy, policy integration and stakeholder engagement for the space station program at the agency level. She oversees use of the space station for research and technology demonstrations to support NASA's Artemis missions, and activities to secure an ongoing U.S. presence in low Earth orbit by enabling a commercial space economy. She also serves as NASA's liaison to the ISS National Laboratory.

# International Partner Program Managers



**Frank De Winne**

*European Space Agency (ESA)  
ISS Program Manager*

Frank De Winne became head of ESA's European Astronaut Center in Cologne, Germany, in August 2012. Since 2017, he has been in charge of ISS operations at ESA. In 2020 he became ESA's ISS Program Manager and heads the LEO Exploration Group in the Directorate of Human and Robotic Exploration.



**Luc Dubé**

*Space Exploration Operations & Infrastructure*

Luc Dubé is Director of Space Exploration Operations & Infrastructure at the Canadian Space Agency (CSA). In this role he serves as Program Manager for Canada's Space Station Program, and he leads the teams and activities relating to CSA's Space Exploration systems (including the Mobile Service System – Canadarm2, Dextre and the Mobile Base).



**Sergei Krikalev**

*State Space Corporation "Roscosmos"  
(ROSCOSMOS) Executive Director for Human  
Space Flights*

Sergei Krikalev is responsible for the implementation of the Russian Human Spaceflight program, particularly for the operation of the ISS Russian segment, the development and creation of new ISS Russian segment modules, and prospective manned transport systems. He coordinates interaction with international partners in the frame of the ISS program and oversees international cooperation in the field of human space exploration.



**SAKAI Junichi**

*Japan Aerospace Exploration Agency (JAXA)  
ISS Program Manager*

The JAXA ISS Program Manager oversees all elements of the KIBO's operation, utilization, Japanese astronauts' activities, and cargo resupply by Japanese vehicles. In addition, he is responsible for international coordination of ISS activities, he contributes to the creation and development of ISS achievements, and promotes public understanding of the ISS programs.

# NASA ISS Program Management



**William Spetch**  
Manager



**Mary Lawrence**  
Deputy Manager



**Courtenay McMillan**  
Manager



**Laura Shaw**  
Deputy Manager



**Mark Martin**  
Manager



**David Korth**  
Deputy Manager



**Scott Seyl**  
Manager



**Ana Lopez**  
Deputy Manager

## Vehicle Office

The Vehicle Office is responsible for keeping station systems and payload facilities sustained and safely operating to advance these capabilities to support a continuous human presence, enhance research, test Mars-forward technologies, and foster the success of commercial partners.

**NASA's Johnson Space Center, Houston**

## Mission Integration and Operations Office

The Mission Integration and Operations Office is responsible for keeping the station crew safely clothed, fed, and productive while in orbit. The team accomplishes this through management of the flight schedule, cargo manifest, as well as overall requirements and priorities.

**NASA's Johnson Space Center, Houston**

## Avionics and Software Office

The Avionics and Software Office is responsible for sustaining command and control system hardware and the software that operates all space station core systems.

**NASA's Johnson Space Center, Houston**

## Safety and Mission Assurance/Program Risk Office

The Safety and Mission Assurance/Program Risk Office is responsible for the definition and implementation of plans and processes to assure that safety, reliability, maintainability, and quality assurance requirements are met.

**NASA's Johnson Space Center, Houston**



**William Cleek**  
Manager



**Gregory Tobeck**  
Deputy Manager



**Jeff Arend**  
Manager



**Adam Baker**  
Acting Deputy Manager



**Phil Dempsey**  
Manager



**Kristi Duplichen**  
Deputy Manager



**Greg Dorth**  
Manager



**Ralph Grau**  
Deputy Manager

## Program Planning and Control (PP&C) Office

The PP&C Office is responsible for providing the program with configuration management, information technology, resources/budget management, independent cost estimating/assessment, and procurement support.

**NASA's Johnson Space Center, Houston**

## Systems Engineering and Integration Office

The Systems Engineering and Integration Office is responsible for implementing vehicle integrated performance enhancements/changes, developing and analyzing upcoming station missions for visiting vehicles, robotic and Japanese Experiment Module airlock activities, and changes to the station's external and internal configuration.

**NASA's Johnson Space Center, Houston**

## Transportation Integration Office

The Transportation Integration Office is responsible for integrating the fleet of U.S. and international spacecraft delivering crews, cargo, and critical science to and from the space station.

**NASA's Johnson Space Center, Houston**

## External Integration Office

The External Integration Office is responsible for establishing and maintaining partnerships and collaborations with international and domestic government agencies, academia, and industry. The office develops and manages key messaging to inspire, inform, and educate the world about the global benefits and opportunities of the station.

**NASA's Johnson Space Center, Houston**

# NASA ISS Program Management



**Ryan Prouty**  
*Manager*



**Steve McGrath**  
*Deputy Manager*



**Jennifer Buchli**  
*Deputy Manager*  
*ISS Program Chief Scientist*



**Randy Robinson**  
*Manager*



**Gaurang Patel**  
*Deputy Manager*



**Whitney Maples**  
*Manager*



**Nicole Pelfrey**  
*Manager*



**George Norris**  
*Deputy Manager*

## Research Integration Office

The Research Integration Office is responsible for bringing new customers to the orbiting laboratory, as well as managing the current customers' needs and expectations. The office performs the strategic and tactical planning and integration of research to ensure the maximum utilization of the space station.

**NASA's Johnson Space Center, Houston**

## Extravehicular Activity Office

The Extravehicular Activity Office is responsible for the safe, effective, and affordable spacewalk capabilities to meet NASA's strategic goals that require spacewalks on International Space Station and Artemis programs.

**NASA's Johnson Space Center, Houston**

## Flight Operations Support

Flight Operations Support is responsible for planning, training, and flying the flight controllers, instructors, and crew members to make the station safe and successful.

**NASA's Johnson Space Center, Houston**

## Payload Mission Operations Division

The Payload Mission Operations Division is responsible for management of the space station science operations, which requires coordinating and synchronizing the execution of science across the international partners and researchers.

**NASA's Marshall Space Flight Center, Huntsville, Alabama**



**Mark Thiessen**  
*Director*



**Barbara Brown**  
*Manager*



**Curt Horanic**  
*Deputy Manager*



**Laura Beachy**  
*Manager*

## Human Space Flight Programs – Russia

The Human Space Flight Programs – Russia, based in Moscow, is the liaison between the International Space Station Program's colleagues in the U.S. and Russia. It is also responsible for all of NASA's coordination in Russia and leading operations in Kazakhstan for Russian Soyuz launch and landing operations.

**Moscow, Russia**

## Exploration Research and Technology Programs

The Exploration Research and Technology Programs Office is responsible for ground processing, logistics, transportation, and launch site services that are key to sustaining the ISS and enabling utilization for research customers.

**NASA's Kennedy Space Center, Florida**

## Human Health and Performance Directorate

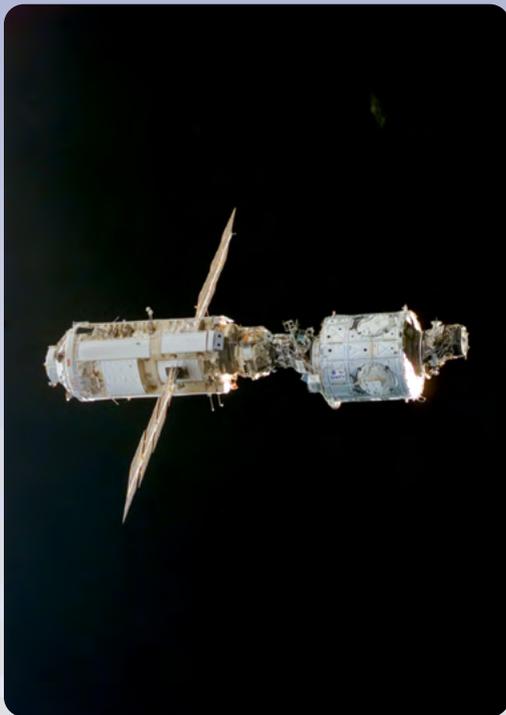
The Human Health and Performance Directorate leads the global spaceflight community in protecting astronaut health and enabling human mission performance. The Human Health and Performance Directorate is responsible for implementing Health & Medical Technical Authority, JSC Occupational Health, the Human Research Program, and Crew Health and Safety activities.

**NASA's Johnson Space Center, Houston**

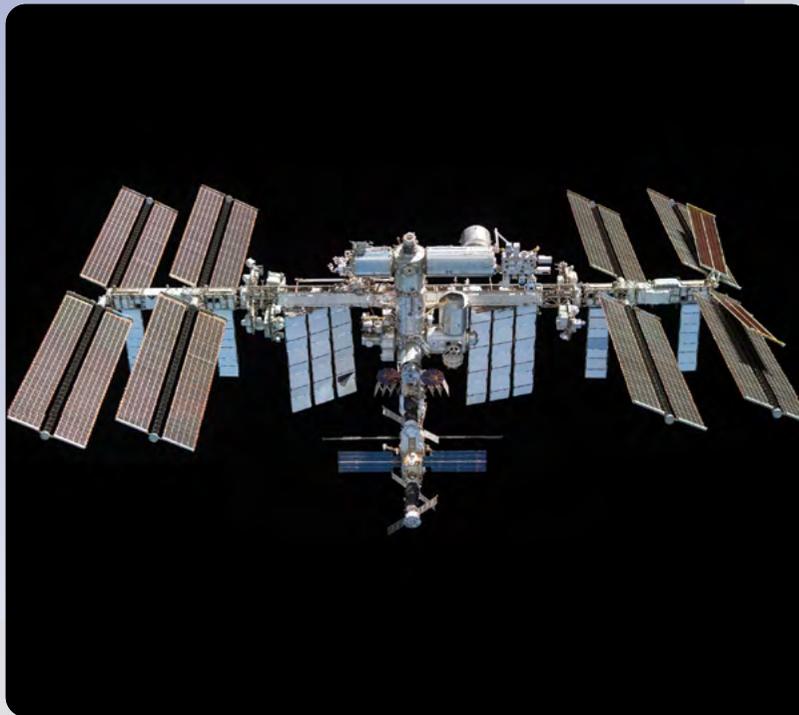


# Extension of the Orbiting Laboratory for Benefit of Humanity

The International Space Station is the largest and most-visited spacecraft in the history of spaceflight. This one-of-a-kind orbiting laboratory provides researchers with features unique to low Earth orbit, such as long-duration microgravity, exposure to space, and vast perspectives of our planet.



**Twenty five years ago:** The Zarya control module is mated with the Unity module, the beginning of the International Space Station.



**Today:** The International Space Station pictured, from the SpaceX Dragon Endeavour spacecraft during a fly-around of the orbiting lab, which took place following its undocking from the Harmony module's space-facing port.

Last year, the International Space Station partners committed to extending the operations of this unique platform in low Earth orbit where, for more than 23 years, humans have lived and worked for the benefit of humanity, conducting cutting-edge science and research in microgravity.

The United States, Japan, Canada, and the participating countries of ESA (European Space Agency) have confirmed they will support continued space station operations through 2030. Russia has confirmed it will support continued station operations through 2028. NASA will continue to work with its partner agencies to ensure an uninterrupted presence in low Earth orbit, as well as a safe and orderly transition from the space station to commercial platforms in the future.

Since its launch in 1998, the International Space Station has been visited by more than 270 individuals from 21 countries. The space station is a unique scientific platform where crew members conduct experiments across multiple disciplines of research, including Earth and space science, biology, human physiology, physical sciences and technology demonstrations that could not be done on Earth.

The crew living aboard the station serve as the hands of thousands of researchers on the ground, conducting more than 3,300 experiments in microgravity. Now, in its third decade of operations, the station is in the decade of results, when the platform can maximize its scientific return. Results are compounding, new benefits are materializing, and innovative research and technology demonstrations are building on previous work.

The International Space Station serves as a springboard to NASA's commercial low Earth orbit commercialization initiatives, as well as the agency's long-term deep space exploration goals to the Moon and on to Mars – all while advancing the quality of life for humankind in nearly every way.

In addition to supporting further exploration of the universe, the research conducted and technology developed on the station has produced direct benefits to humanity that we see on Earth. These benefits include advances in development of pharmaceuticals, better disaster-response capabilities, improved materials for manufacturing, progression in robotics, and even the bioprinting of human tissue.

As the station heads toward 2030, it builds on its successful global partnership, enabling exploration and human research technologies to support NASA's deep-space exploration initiatives and lay the groundwork for a commercial future in low Earth orbit.





# JANUARY 2024

**GREETINGS FROM THE ORBITING LABORATORY** | The International Space Station has been continuously occupied for more than 23 years since November 2000. An international crew of seven people live and work while traveling at a speed of five miles per second, orbiting Earth about every 90 minutes. Sometimes more than seven people are aboard the station during a crew handover, as you see in this image. In the bottom row is (from left) NASA astronaut Frank Rubio and Roscosmos cosmonauts Sergey Prokopyev and Dmitri Petelin, pictured here after reaching 365 days, or one year, in space aboard station. They departed the space station inside the Soyuz MS-23 crew ship after 371 days living in Earth orbit. In the top row are the seven Expedition 70 crew members who are aboard the orbiting lab until spring 2024.

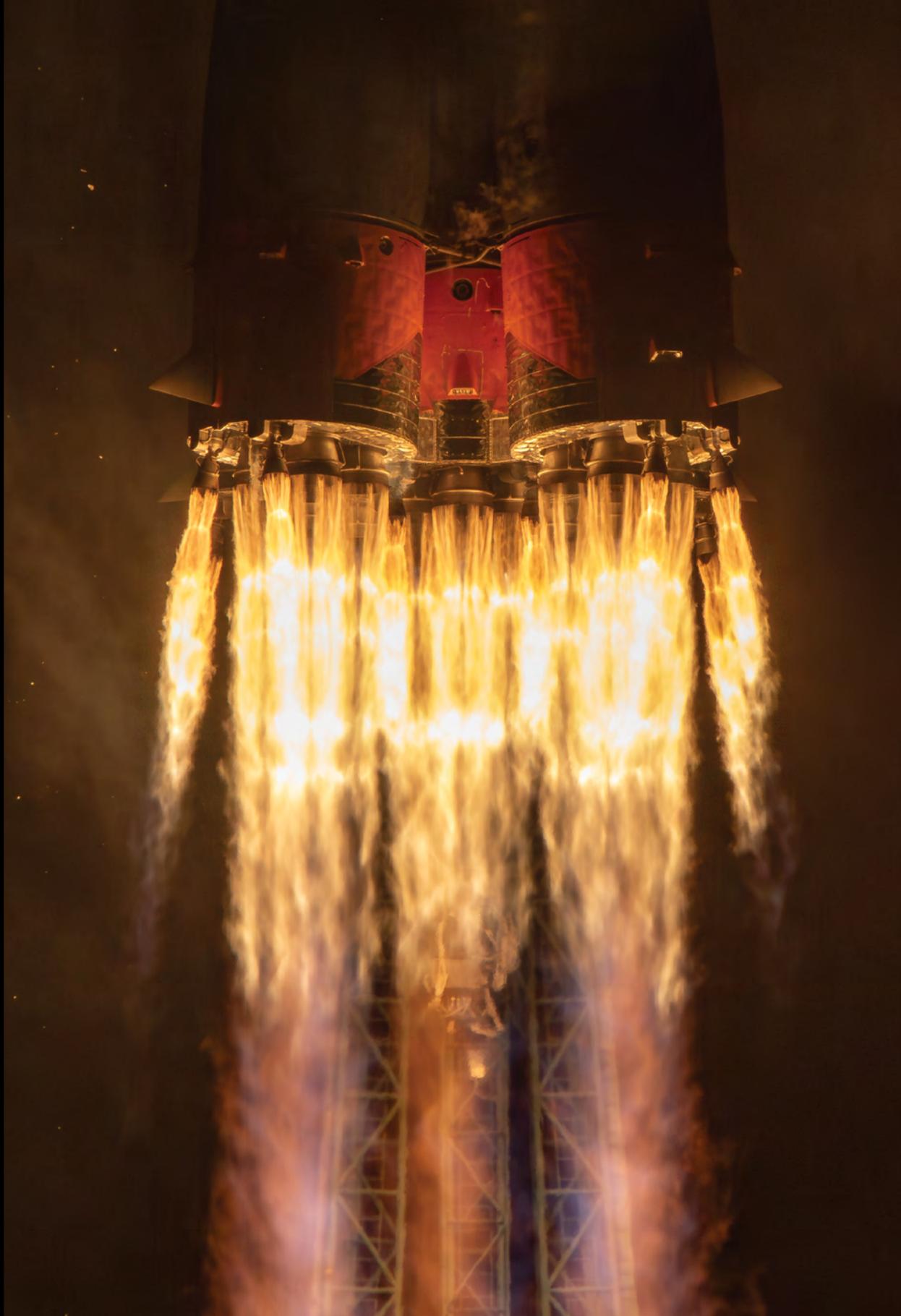


NASA astronaut Jasmin Moghbeli, being welcomed by the Expedition 69 crew, poses for a photo in the first moments the Crew-7 quartet is aboard the International Space Station after hatch opening.



📍 269 miles (433 kilometers) above the Atlantic Ocean just off the coast of southern Argentina, the last rays of an orbital sunset fade below Earth's horizon. In 24 hours, the space station makes 16 orbits of Earth, traveling through 16 sunrises and sunsets.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p><b>Moon phases</b> <b>U.S. Central Time Zone</b> Keep up with the Expedition 70 crew, the science investigations they are working on daily, and see the latest imagery:</p> 	1 <b>New Year's Day</b>	2	3 	4	5	6
7	8 <b>Coming-of-Age Day (JAXA)</b>	9	10	11 	12	13
14	15 <b>Martin Luther King Jr. Day (NASA)</b>	16	17 	18	19	20
21	22	23	24	25  <b>1984:</b> President Ronald Reagan directs NASA to build an international space station "within a decade" in his State of the Union address	26	27 <b>1967:</b> Apollo 1 fire
28 <b>1986:</b> Space shuttle Challenger accident	29 <b>1998:</b> fifteen countries met to sign an agreement to establish the framework for cooperation among the partners on the design, development, operation, and utilization of the space station	30	31		 <p>The Expedition 70 patch is designed around the central yin-yang symbol representing balance. Learn more about the behind the design here:</p> 	



# FEBRUARY 2024

**TRAVELING TO THE ORBITING LABORATORY** | Over 270 individuals representing 21 countries and five international partners have visited the International Space Station. Crew members have launched to the station via the space shuttle (retired), Roscosmos' Soyuz rocket and crew capsule, as well as the SpaceX Falcon 9 rocket and Dragon crew spacecraft. Seen above is Expedition 70 (the crew is pictured in the top row of January's image) on its way to the station. **LEFT:** A SpaceX Falcon 9 rocket lifts off the pad from Kennedy Space Center's Launch Complex 39A in Florida, carrying NASA's SpaceX Crew-7 crew members to station. **RIGHT:** The Soyuz rocket is launched with MS-24 at the Baikonur Cosmodrome in Kazakhstan.

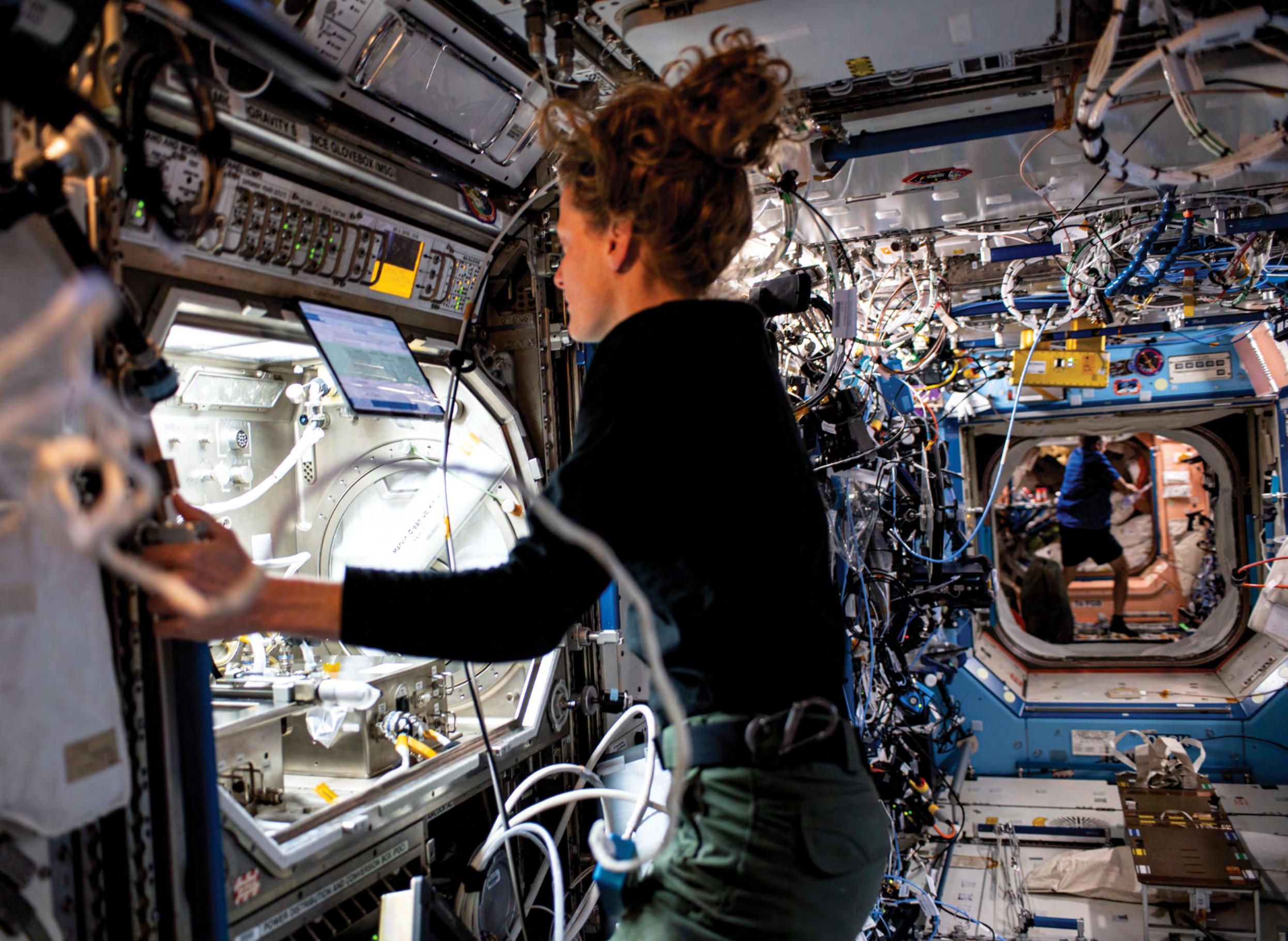


The SpaceX Dragon Endeavour with four Crew-6 members aboard approaches the International Space Station for an automated docking to the Harmony module's space-facing port after just under a 25-hour transit from liftoff.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<i>Moon phases</i> <i>U.S. Central Time Zone</i>						
				1 <b>2003:</b> Space shuttle Columbia accident	2	3
4	5	6	7 <b>2001:</b> The U.S. Destiny Laboratory launches to the space station on STS-98; <b>2008:</b> ESA's Columbus module launches to the space station on STS-122	8 <b>2010:</b> Tranquility and Cupola launch to the space station on STS-130	9	10
11 <b>National Foundation Day (JAXA)</b>	12 <b>2001:</b> First major laboratory module, the U.S. Destiny Laboratory, added to the space station	13	14	15	16	17
18	19 <b>Presidents Day (NASA)</b> <b>1986:</b> The Russian Space Station Mir's first module launches from Baikonur	20	21	22	23 <b>Emperor's Birthday (JAXA)</b>	24
25	26 <b>2004:</b> Expedition 8 crew Michael Foale and Alexander Kaleri space-walk without a human crew member inside	27	28	29	<b>Daily Updates from the International Space Station:</b> Stay up-to-date with day-to-day operations, visiting vehicles, and research taking place from the orbiting laboratory with daily blog updates: 	



The Soyuz MS-24 spacecraft carrying three crew members approaches the International Space Station for a docking to the Rassvet module. Nearly three-and-half hours after launching from the Baikonur Cosmodrome in Kazakhstan, the crew members would open the Soyuz hatch, enter the station, and begin their space research mission.



# MARCH 2024

**SCIENCE AT 17,500 MPH** | Once crew members arrive to the International Space Station, their next six months are dedicated to carrying out more than 200 science experiments and technology demonstrations that will take place during their mission. But what is so special about a research platform 250 miles above? It's all about location. An orbiting laboratory provides researchers with the unique features of low Earth orbit, long-duration microgravity, exposure to space, and a unique perspective on our planet. These attributes enable scientists to conduct innovative experiments that cannot be done anywhere else. Pictured above is NASA astronaut Loral O'Hara as she removes space physics research hardware from inside the Destiny laboratory module's Microgravity Science Glovebox aboard the International Space Station. Managed by NASA's Marshall Space Flight Center in Huntsville, Alabama, the glovebox is designed to closely simulate working conditions on the ground.



Powering the research facilities in support of hundreds of experiments, this close-up photo shows the intricate details of just one solar array on the International Space Station as it orbited above the Middle East. Made up of thousands of solar cells, the arrays convert energy from the Sun into electricity for the station, each array providing more than 30 kilowatts per panel, capable of withstanding the dynamic environment of space.

An orbital sunrise begins illuminating Earth's atmosphere and its horizon in this photograph from the International Space Station as it orbited 268 miles above the south Atlantic Ocean off the coast of Argentina.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p><b>Moon phases</b> <b>U.S. Central Time Zone</b></p> <p>Since the first crew's arrival aboard more than 20 years ago, the International Space Station has evolved into a state-of-the-art scientific lab that has hosted over 3,000 experiments from over 4,000 researchers from over 100 countries, resulting in over 2,000 scientific journal publications, including over 500 papers in top-tier journals. Learn more about station research and technology:</p> 						<p><b>2016:</b> NASA astronaut Scott Kelly and Russian cosmonaut Mikhail Kornienko return to Earth after their one-year mission; <b>2019:</b> NASA's SpaceX Demo-1 launches to the space station; <b>2023:</b> NASA's SpaceX Crew-6 launches to the space station</p>
 3	4	5	6	7	8	9
 10	<p><b>2008:</b> The Canadian Space Agency's robotic system Dextre launches on STS-123</p>	12	13	14	15	 16
17	18	19	20 <b>Vernal Equinox Day (JAXA)</b>	21	22	23
<p>24/31</p>	 25	26	27	28	29 <b>Good Friday (CSA, ESA: ESTEC, Col-CC, EAC)</b>	30



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Canada

# APRIL 2024

**SCIENCE AND CARGO DELIVERY WITH CYGNUS** | Resupplying the space station with science, research, and crew supplies is critical to the success of the orbiting laboratory. Under NASA's commercial resupply services contract, Northrop Grumman and SpaceX deliver critical science, hardware, and supplies to crew aboard the International Space Station. Northrop Grumman's Cygnus cargo craft is pictured moments after it was captured by the Canadarm2 robotic arm controlled by NASA astronaut Woody Hoburg from inside the International Space Station. Carrying a supply of over 8,200 pounds of scientific investigations and cargo to the orbiting laboratory, this was Northrop Grumman's 19th commercial resupply mission to the International Space Station for NASA.



📍 261 miles (420 kilometers) above the coast of the Garabogazköl Basin in Turkmenista, Northrop Grumman's Cygnus cargo craft is pictured from the International Space Station as it approaches.



📍 260 miles (418 kilometers) above the Black Sea, NASA astronauts Frank Rubio (left) and Woody Hoburg (right), are pictured in the International Space Station's cupola with Northrop Grumman's Cygnus cargo craft outside in the grips of the Canadarm2 robotic arm.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p><i>Moon phases</i> <i>U.S. Central Time Zone</i></p> 	<p>1 <b>Easter Monday</b> (CSA, ESA: HQ, ESTEC, Col-CC, EAC)</p>	2	3	4	5	6
<p>7 <b>2010:</b> The joining of the space station and STS-131 crews marks the first time four women are in space at the same time</p>	<p>8 <b>2016:</b> A Bigelow inflatable Expandable Activity Module becomes the first commercially designed, manufactured, and owned space station structure in orbit; <b>2022:</b> NASA's first private astronaut mission to the space station, Axiom Mission 1 launches</p>	9	10	11	<p>12 <b>1961:</b> Cosmonaut Yuri Gagarin becomes the first human in orbit; <b>1981:</b> First mission of the Space Shuttle Program, STS-1, launches</p>	13
<p>14</p>	<p>15</p> 	16	17	18	<p>19 <b>1971:</b> Salyut 1 launches from Baikonur; <b>2001:</b> Canadarm2 Space Station Remote Manipulator System launches to the space station on STS-100</p>	20
<p>21</p>	<p>22 <b>Earth Day</b></p>	<p>23</p> 	<p>24 <b>1990:</b> NASA's Hubble Space Telescope launches</p>	25	26	<p>27 <b>2022:</b> NASA's SpaceX Crew-4 launches to the space station</p>
<p>28</p>	<p>29 <b>Shōwa Day (JAXA)</b></p>	30				<p>For the latest in commercial resupply to the International Space Station, visit:</p> 



# MAY 2024

**SCIENCE AND CARGO DELIVERY WITH DRAGON** | Under NASA's commercial resupply services contract, SpaceX and Northrop Grumman deliver critical science, hardware, and supplies to crew aboard the International Space Station. Creating a golden streak in the night sky, a SpaceX Falcon 9 rocket soars upward after liftoff from Launch Complex 39A at NASA's Kennedy Space Center in Florida on the company's 27th Commercial Resupply Services mission for the agency to the International Space Station. The Dragon spacecraft delivered more than 6,000 pounds of science and research, supplies, and equipment to the crew aboard the space station.

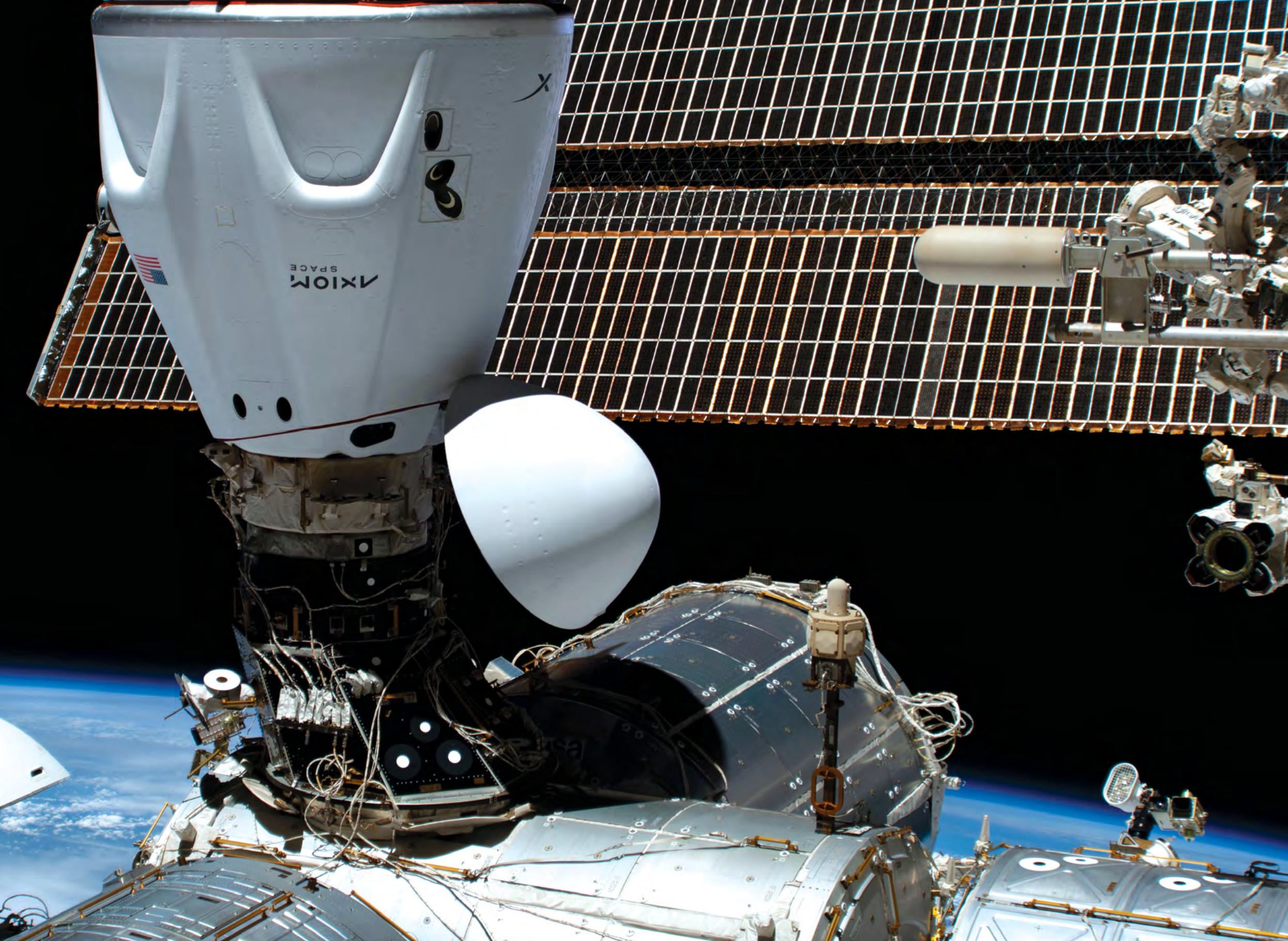


📍 261 miles (420 kilometers) above the Indian Ocean, the SpaceX Dragon cargo spacecraft approaches the International Space Station carrying more than 6,200 pounds of science experiments, crew supplies, and other cargo, to replenish the Expedition 68 crew.



UAE (United Arab Emirates) astronaut Sultan Alneyadi peers into the International Space Station while working inside the SpaceX Dragon cargo spacecraft.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p><b>Moon phases</b> <b>U.S. Central Time Zone</b></p> <p>Did you know eight spaceships can be connected to the space station at one time? A spacecraft can arrive at the space station as soon as four hours after launching from Earth. Keep up with the latest visiting vehicles to the International Space Station:</p> 			 1	2	3 <b>Constitution Memorial Day (JAXA)</b>	4 <b>Greenery Day (JAXA)</b>
 5 <b>Children's Day (JAXA)</b> 1961: Alan Shepard Jr. becomes the first American in space	6	7	8	9 <b>Ascension Day (ESA: HQ, ESTEC, Col-CC, EAC)</b>	10	11
12	13	14 <b>1973:</b> Skylab 1 space station launches aboard the Saturn V rocket	 15	16	17	18
19 <b>2022:</b> NASA's Boeing Orbital Flight Test 2 launches to the space station	20 <b>Whit Monday (ESA: HQ, ESTEC, Col-CC, EAC)</b> <b>Victoria Day (CSA)</b>	21	22 <b>2012:</b> First SpaceX Dragon cargo craft launches to the space station	 23	24	25
26	27 <b>Memorial Day (NASA)</b>	28	29 <b>2009:</b> The first time a space station hosts a long-term crew of six crew members	 30 <b>Corpus Christi (ESA: Col-CC, EAC)</b> <b>2020:</b> NASA's SpaceX Demo-2 launches to the space station	31 <b>2008:</b> The Japanese Kibo pressurized module launches to the space station on STS-124	



# JUNE 2024

**ENABLING LOW EARTH ORBIT COMMERCIALIZATION** | The International Space Station opened its ports to new types of visitors: Private astronauts. Enabling private astronaut missions to the space station is part of the agency's goal to develop a robust low Earth orbit economy where NASA is one of many customers, and the private sector leads the way. Pictured above is the SpaceX Dragon Freedom spacecraft docked to the space-facing port on the station's Harmony module that carried the crew of the second private astronaut mission, Axiom Mission-2, safely to and from the orbiting lab.



Axiom Space private astronaut and Axiom Mission-2 Commander Peggy Whitson enters the International Space Station. Welcoming her inside the vestibule between the station's Harmony module and the SpaceX Dragon Freedom spacecraft is NASA astronaut Frank Rubio. Peggy Whitson currently holds the U.S. record for spending the most total time living and working in space: 675 days. While most of these were during her time as a NASA astronaut, she extended her record cumulative time in space by nine days as an Axiom Space astronaut during this mission in 2023.



📍 260 miles (418 kilometers) above the Atlantic Ocean, light pink-orange and white clouds scatter across the blue waters.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<i>Moon phases</i> <i>U.S. Central Time Zone</i>						1
2	3 <b>1965:</b> First U.S. space-walk by Edward White on Gemini IV	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18 <b>1983:</b> Sally Ride becomes the first U.S. female in space	19 <b>Juneteenth Independence Day (NASA)</b>	20	21	22
23/30	24 <b>Saint-Jean-Baptiste Day (CSA, Quebec only)</b>	25	26	27 <b>1995:</b> STS-71 Space shuttle Atlantis launches, first Shuttle-Mir docking	28	29

Learn more about how NASA is supporting a space economy in low Earth orbit:





Canada

# JULY 2024

**A SPRINGBOARD TO DEEP SPACE EXPLORATION** | The International Space Station is a state-of-the-art microgravity laboratory that is unlocking discoveries not possible on Earth and helping us push farther into deep space. The space station remains the springboard to NASA's next great leap in exploration, enabling research and technology developments that will benefit human and robotic exploration of destinations beyond low Earth orbit, such as the Moon and Mars. The station enables long-duration research on how living in microgravity affects living organisms, especially humans, as well as testing technologies to allow humans to work at the Moon. Pictured here, an almost-full moon glows in the back as the space station orbits 268 miles (431 kilometers) above the coast of Argentina.



In 2023, upon return home with his Roscosmos cosmonaut crew mates Sergey Prokopyev and Dmitri Petelin, Frank Rubio broke the record for the longest single spaceflight by an American astronaut in history after a total of 371 days in space.



Thale cress plants, similar to cabbage and mustard, are pictured growing for the Plant Habitat-03 space botany experiment, helping researchers learn how to grow food and sustain crews on future long-duration space missions.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p><i>Moon phases</i> <i>U.S. Central Time Zone</i></p>						
	1 Canada Day (CSA)	2	3	4 Independence Day (NASA)	5	6
7 2011: STS-135 Space shuttle Atlantis launches to the space station on the final mission of the Space Shuttle Program	8	9	10	11	12 2000: Russian Zvezda service module launches to the space station 2001: U.S. Quest joint airlock launches to the space station on STS-104	13 
14	15 Marine Day (JAXA)	16 1969: Apollo 11 mission launches to land first humans on the Moon	17	18	19	20 1969: Apollo 11 mission lands first humans on the Moon
						
21	22	23	24	25	26	27
28	29 2021: Russia's Nauka multipurpose laboratory module docks to the space station	30	31			<p>The International Space Station has been continuously occupied by crew members for more than 23 years. Learn more about humans in space:</p> 



# AUGUST 2024

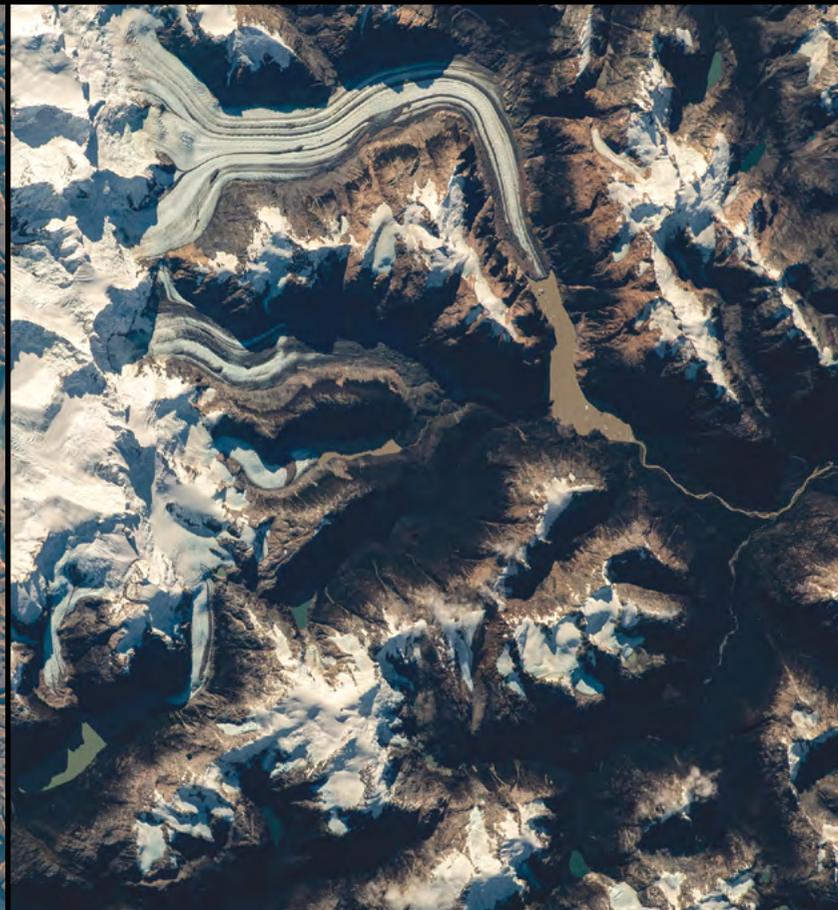
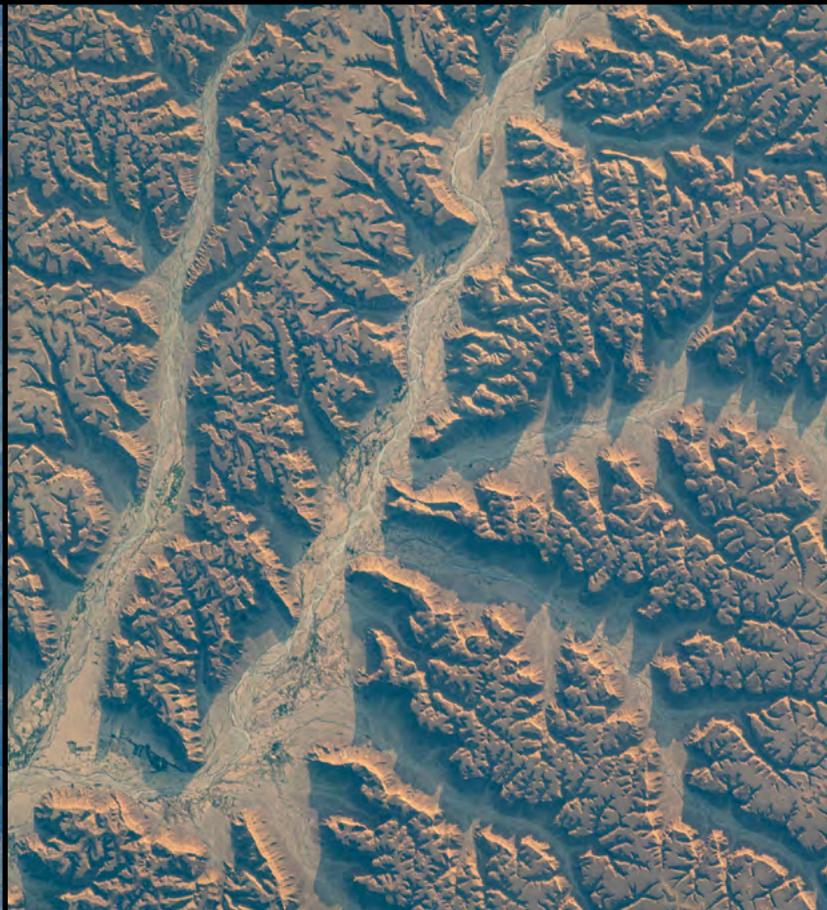
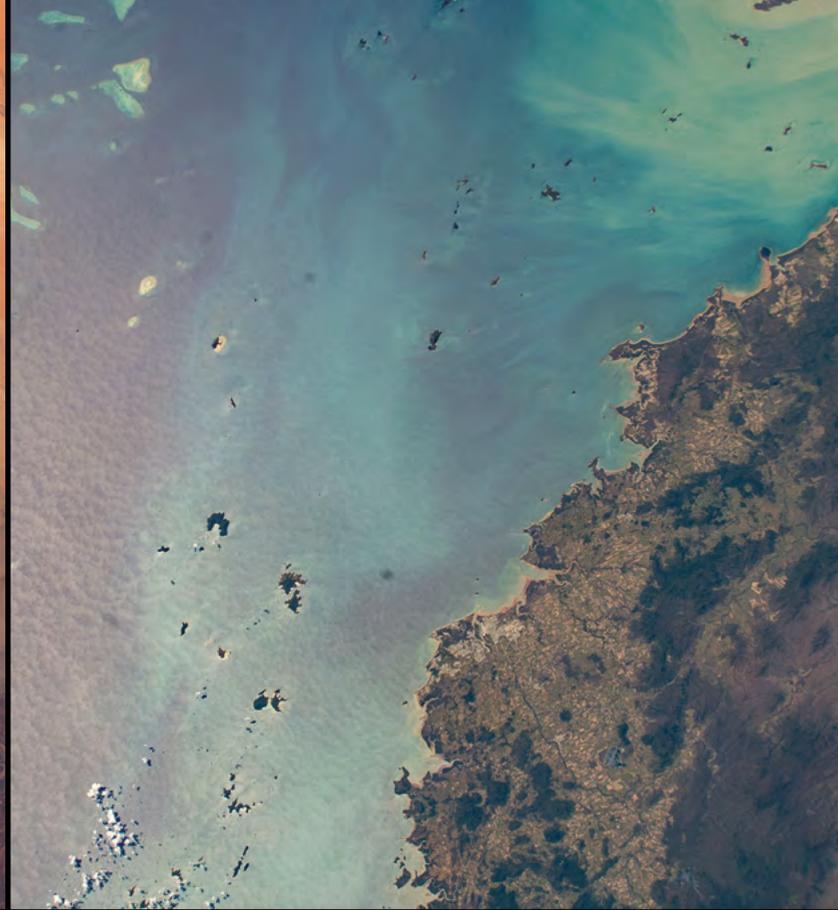
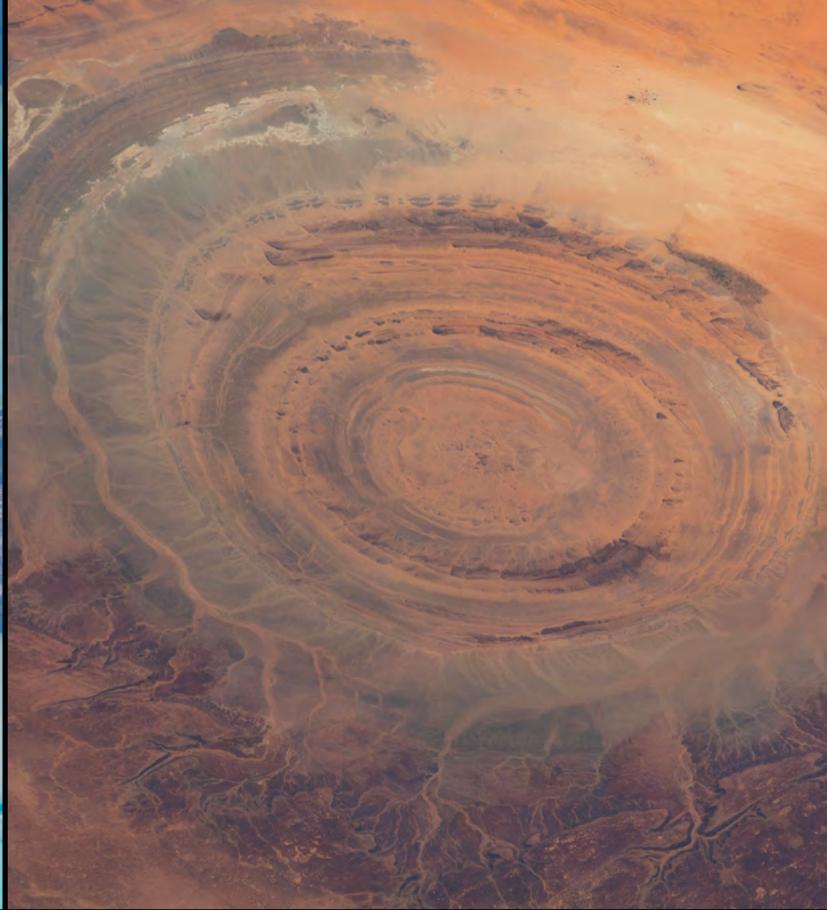
**EARTH OBSERVATION FROM STATION** | The phrase “a picture is worth a thousand words” has never been truer than when it comes to the photographs and imagery produced by crew aboard the International Space Station. The spectacular vantage point of orbiting our planet every 90 minutes at an altitude of approximately 400 kilometers (250 miles) supports our monitoring of Earth’s climate, natural disasters, and plant life. After completing scientific observation training, crew members use hand-held cameras to regularly take photographs of features such as volcanic eruptions, urban areas, bodies of water, and meteorological phenomena. The information gathered by crew photographs supports global-scale investigations related to the composition, health, and future of Earth. Having a crew aboard to photograph Earth provides flexibility, a significant advantage over sensors on robotic spacecraft. Pictured here is NASA astronaut Woody Hoburg inside the seven-window cupola photographing Lake Nasser in southern Egypt.



Pictured above is Lake Nasser in Egypt, one of the Earth observation images taken by NASA astronaut Woody Hoburg, in the above photo. The station’s orbit provides another advantage: Because its orbit is not synchronized with Earth, the station passes over places between latitudes 51.6 degrees north and 51.6 degrees south at different times of the day. This orbit makes it possible to capture images of a particular location from different angles and varying light conditions, and even to photograph infrequent and short-term events. This capability proves particularly useful for studying natural disasters. Seen below, Category 1 Hurricane Nigel is pictured on a northeasterly track in the Atlantic Ocean as the International Space Station orbited 258 miles (415 kilometers) above.



SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p><b>Moon phases</b> <b>U.S. Central Time Zone</b></p> <p>Astronauts take images using handheld digital cameras, usually through windows in the station’s cupola, for Crew Earth Observations. Earth Observations Imagery is free and accessible through the Gateway to Astronaut Photography of Earth, which offers several ways to investigate existing data and accepts requests from researchers and educators for new imagery.</p> 						
1				1	2	3
						
4	5 <b>Civic Holiday (GSA)</b>	6	7	8	9	10
						
11 <b>Mountain Day (JAXA)</b>	12	13	14	15 <b>Assumption of Mary (ESA: HQ)</b>	16	17
						
18	19	20	21	22	23	24
						
25 <b>2023:</b> NASA’s SpaceX Crew-7 launches to the space station	26	27	28	29 <b>2016:</b> First DNA sequencing in space performed by astronaut Kate Rubins aboard the space station	30	31



# SEPTEMBER 2024

**AROUND THE WORLD IN 90 MINUTES:** Each of the seven continents of the world are represented within the images above and the top left image below. Can you guess which continent is represented in each image? (Answers at bottom.)



The space station houses an international crew of seven people who live and work while traveling at a speed of five miles per second, orbiting Earth about every 90 minutes.



NASA astronaut Josh Cassada peers through one of the seven windows in the cupola, the International Space Station's "window to the world."

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p><i>Moon phases</i> <i>U.S. Central Time Zone</i></p> <p>1</p>	<p>2 Labor Day (NASA, CSA)</p>	<p>3</p>	<p>4</p>	<p>5</p>	<p>6</p>	<p>7</p>
<p>8</p>	<p>9</p>	<p>10 2009: First JAXA H-II Transfer Vehicle launches to the space station</p>	<p>11 2023: NASA astronaut Frank Rubio breaks the record for the most consecutive days in space by an American explorer. He holds the record for 371 days</p>	<p>12</p>	<p>13</p>	<p>14</p>
<p>15</p>	<p>16 Respect for the Aged Day (JAXA)</p>	<p>17</p>	<p>18 2013: First Northrop Grumman Cygnus space freighter launches to the space station</p>	<p>19</p>	<p>20</p>	<p>21</p>
<p>22 Autumnal Equinox Day (JAXA)</p>	<p>23</p>	<p>24</p>	<p>25</p>	<p>26</p>	<p>27</p>	<p>28</p>
<p>29</p>	<p>30 National Day for Truth and Reconciliation (CSA)</p>	<p>Heads up! Did you know you that the International Space Station is the third-brightest object in the sky and easy to spot if you know when to look up?</p> <p>Download NASA's Spot the Station mobile application for opportunities to #SpotTheStation no matter where you are.</p> 	<p>29</p>	<p>30</p>	<p>31</p>	<p>32</p>

**Top Left:** *North America.* Culmer's Cay, Glass Cay, Tommy Young's Cay, Davy Cay, Hog Cay, and Green Turtle Cay — islands off the mainland Great Abaco in the Bahamas; **Top Middle:** *Africa.* The Richat Structure, also known as the "Eye of the Sahara," an eroded geological dome in the nation of Mauritania; **Top Right:** *Australia.* The eastern coast of Queensland, Australia, on the Great Barrier Reef; **Bottom Left:** *Europe.* The Alpine region of Switzerland (Swiss Alps) seen from the station as it orbited above Geneva; **Bottom Middle:** *Asia.* Wadis, or river valleys that are dry in winter months, in Yemen; **Bottom Right:** *South America.* Known for its many rivers and one of Northern Patagonia's largest glaciers, Laguna San Rafael National Park in Chile is photographed from the station; **Side Left Top:** *Antarctica.*



# OCTOBER 2024

**ALL IN A DAY'S WORK** | Not only would the complex assembly of the space station have been impossible without the skilled labors of spacewalking astronauts and cosmonauts, but today they remain critical to the continued maintenance of the world-class laboratory in low Earth orbit. Pictured here is astronaut Koichi Wakata of the JAXA (Japan Aerospace Exploration Agency) in his spacesuit, during his second spacewalk. He and fellow spacewalker Nicole Mann (out of frame) of NASA installed a modification kit on the International Space Station's starboard truss structure that enabled the installation of one of the orbiting lab's roll-out solar arrays.



SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<b>Moon phases</b> <b>U.S. Central Time Zone</b>			●			
		1 <b>1958:</b> First day of NASA operations	2	3	4 <b>1957:</b> The world's first artificial satellite, Sputnik 1, launches from the Soviet Union	5 <b>2022:</b> NASA's SpaceX Crew-5 launches to the space station
				☾		
6	7	8	9	10 <b>2007:</b> Peggy Whitson becomes the first female astronaut to command the space station	11	12
				☾		
13	14 <b>Columbus Day (NASA); Sports Day (JAXA); Thanksgiving Day (CSA, Canada)</b> <b>1947:</b> Charles "Chuck" Yeager becomes the first human to attain supersonic flight	15	16	17	18	19
				☾		
20	21	22	23 <b>2007:</b> U.S. Harmony module launches to the space station on STS-120	24 <b>1946:</b> First motion pictures taken of Earth from space by a U.S.-launched V-2 rocket	25	26
27	28	29	30	31	There have been more than 270 spacewalks at the International Space Station since December 1998. Learn more about spacewalks and when to tune in for coverage of the next one: 	

NASA astronaut Josh Cassada prepares a roll-out solar array for its deployment on the International Space Station's Port-4 truss segment as the orbiting lab flies 262 miles (422 kilometers) above the Atlantic Ocean off the coast of Namibia.

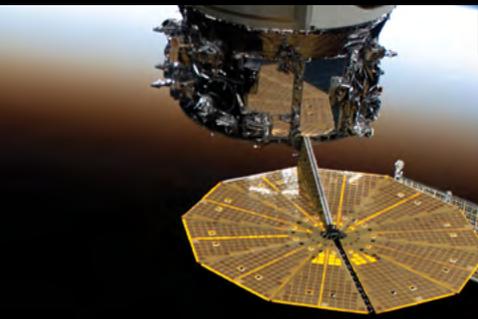


📍 260 miles (418 kilometers) above and northwest of Midway Atoll, the sun's glint beams off a partly cloudy Pacific Ocean.



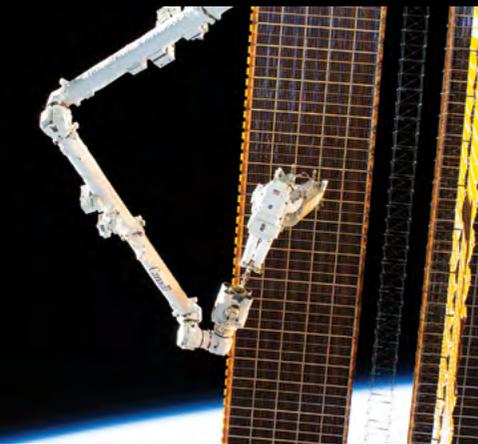
# NOVEMBER 2024

**THE ORBITING LABORATORY FOR THE BENEFIT OF ALL** | There are numerous benefits of the microgravity laboratory, including groundbreaking discoveries helping society, technologies tested for future space exploration, new scientific breakthroughs, and contributions to the growing low Earth orbit economy. 261 miles (420 kilometers) above the Balearic Sea off the coast of Mallorca, this photograph shows the Mediterranean Sea ringed by the coastal city lights of Morocco and Algeria on the African side and Spain on the European side. The city lights extending to the Strait of Gibraltar and the Atlantic Ocean are also prominent. Flip to December to see a similar view of this landscape during daytime.



SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p><b>Moon phases</b> <b>U.S. Central Time Zone</b> Learn more about station benefits for humanity:</p> 						<p><b>2000:</b> Expedition 1 arrives at the space station, beginning an era of continuous human presence in space that remains unbroken to this day</p>
<p>3 <b>Culture Day (JAXA)</b></p>	4	5	6	7		<p>2</p>
<p>10 <b>2021:</b> NASA's SpaceX Crew-3 launches to the space station</p>	<p>11 <b>Veterans Day (NASA); Remembrance Day (CSA)</b></p>	12	13	14		<p>15 <b>2020:</b> NASA's SpaceX Crew-1 launches to the space station</p>
17	18	19	<p>20 <b>1998:</b> Russia's Zarya module, the first component of the space station, launches from Baikonur on a Proton K rocket</p>	21		<p>23 <b>Labor Thanksgiving Day (JAXA)</b></p>
24	25	26	27	<p>28 <b>Thanksgiving Day (NASA)</b></p>	29	30

258 miles (415 kilometers) above the Atlantic Ocean off the coast of Africa, the cymbal-shaped UltraFlex solar array that powers the Northrop Grumman Cygnus space freighter is pictured as the International Space Station orbits into a sunset.



NASA astronaut Woody Hoburg is pictured during a spacewalk riding the Canadarm2 robotic arm and carrying a roll-out solar array to its installation point on the International Space Station's Starboard-6 truss structure.



# DECEMBER 2024

**OUR HOME PLANET** | Once one crew member's mission aboard the orbiting laboratory comes to an end, another one's begins. Pictured above is a view of Earth captured from a window on the SpaceX Dragon Endurance spacecraft as it approached the station with a new crew of four, who were ready for their six-month science mission on the orbiting laboratory. In the image is the Strait of Gibraltar that connects the Atlantic Ocean to the Mediterranean Sea, which separates the continents of Europe and Africa. Pictured below are the SpaceX Dragon and Soyuz spacecraft ending their journeys and returning back to our home planet with crew members from the International Space Station.



The SpaceX Dragon Freedom spacecraft is pictured moments before splashdown with the crew of NASA's SpaceX Crew-4 returning after 170 days in space as part of Expeditions 67 and 68 aboard the International Space Station.



The Soyuz MS-23 spacecraft is seen as it lands in a remote area near the town of Zhezkazgan, Kazakhstan with the Expeditions 68-69 trio (NASA astronaut Frank Rubio, Roscosmos cosmonauts Dmitri Petelin and Sergey Prokopyev) after 371 days in space aboard the International Space Station.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
 <p><i>Moon phases U.S. Central Time Zone</i></p>						
1	2	3	4 <b>1998:</b> Launch of the first space station assembly mission, includes delivery of the first U.S. element of the station, Unity	5	6	7 <b>1998:</b> First U.S. spacewalk from the space station
						
8	9	10	11	12	13	14
						
15	16	17	18	19	20	21
						
22	23	24	25 <b>2021:</b> The James Webb Space Telescope launches on an Ariane 5 launch vehicle <b>Christmas Day (NASA, CSA, ESA: HQ, ESTEC, Col-CC, EAC)</b>	26 <b>Boxing Day (CSA, ESA: HQ, ESTEC, Col-CC, EAC)</b>	27	28
29	30 	31				<p>For the latest information on the International Space Station, visit:</p> 

## Humans in Space

[www.nasa.gov/humansinspace](http://www.nasa.gov/humansinspace)

## International Space Station

[www.nasa.gov/station](http://www.nasa.gov/station)

## Space Station Research and Technology Overview

[www.nasa.gov/iss-science](http://www.nasa.gov/iss-science)

## Latest News About Space Station Research

[www.nasa.gov/stationresearchnews](http://www.nasa.gov/stationresearchnews)

## Space Station Science 101

[www.nasa.gov/stationscience101/](http://www.nasa.gov/stationscience101/)

## Space Station Research Benefits for Humanity

[www.nasa.gov/stationbenefits](http://www.nasa.gov/stationbenefits)

## Space Station Opportunities for Researchers

[www.nasa.gov/stationopportunities](http://www.nasa.gov/stationopportunities)

## International Space Station National Laboratory

[www.issnationallab.org](http://www.issnationallab.org)

<https://www.nasa.gov/stationnationallab/>

## In Space Production Applications

[www.nasa.gov/inspa](http://www.nasa.gov/inspa)

## Space Station Experiments/Facilities/Publications

[www.nasa.gov/stationexperiments](http://www.nasa.gov/stationexperiments)

## Space Station Annual Highlights of Results

[www.nasa.gov/stationresults](http://www.nasa.gov/stationresults)

## Space Station Research Resources

[www.nasa.gov/stationresearchresources](http://www.nasa.gov/stationresearchresources)

## Space Station for Students and Educators

[www.nasa.gov/stemonstation](http://www.nasa.gov/stemonstation)

## Space Station Research Xplorer Mobile App

[www.nasa.gov/stationresearchapp](http://www.nasa.gov/stationresearchapp)

## Commercial Crew Program

[www.nasa.gov/commercialcrew](http://www.nasa.gov/commercialcrew)

## Commercial Low Earth Orbit Economy News and Opportunities

[www.nasa.gov/leo-economy](http://www.nasa.gov/leo-economy)

## Launches and Landings Schedule

<https://www.nasa.gov/events>

## Spot the Station Soaring Over the Sky Near You

[spotthestation.nasa.gov/](http://spotthestation.nasa.gov/)

## Ciencia en la estación (Station research information in Spanish)

[www.nasa.gov/ciencia-en-la-estacion](http://www.nasa.gov/ciencia-en-la-estacion)

Find these International Space Station resources and more here:



The space station is a convergence of science, technology, and human innovation that demonstrates new technologies and enables research not possible on Earth. The space station serves as the springboard to NASA's human exploration of deep space, including future missions to the Moon and Mars.

